

LHC Accelerator Research Program

Beam Instrumentation Plans

LARP Collaboration Meeting

Fermilab

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Tune Tracking/PLL Plans

- Collaboration between BNL/FNAL/CERN
 - More complex program
 - agreements on activities still in progress
- Four areas of collaboration identified
 - beam tests at RHIC
 - beam tests at SPS in summer 2004
 - system evaluation (baseband/HF)
 - system specific studies
- Pete Cameron identified as leader/coordinator of effort



PLL Budget

hardware and software					50	80
testing with beam					40	20
BNL totals	77	36	130	110	205	220
	FY04 total	113	FY05 total	240	FY06 total	425
FNAL						
theory of PLL (Burov - AP?)	10		26			
PLL implementation				26		
beam simulator		3		7		
Schottky feasibility study	5		13			
engineering student		20		26		
Engineer		5	39			
FNAL totals	15	28	78	59	0	0
	FY04 total	43	FY05 total	137	FY06 total	0
total by FY, BNL + FNAL		156		377		425
'base' budget		138		160		370



LUMI Plans

FY04

- Continue performance tests
 - Complete 40 MHz test and optimization
- Start production engineering study
- Lumi review: technology validation

FY 05

- Complete mechanical fabrication details
- Integrate test stand with standard CERN DAQ system
- Integration into TAN
- Continue performance tests and electronics integration - test at FNAL/RHIC?
- Radiation damage assessment

FY06

- Fabrication of 4 units + spares
- Fabrication of auxiliary hardware (install and remove gear)
- Device tests, electronics integration and performance qualification

FY07

- Transfer to CERN
- Installation support
- Pre-commissioning support

FY08

- Commissioning and pre-operations support



LDM Plans

FY04

No funding!

Determine feasibility of laser system in LHC tunnel

FY05

Systems requirements and conceptual design

Engineering R&D - prototypes

FY 06

Production/procurement

Custom engineering

Integration with CERN DAQ systems

FY07

Transfer to CERN

Installation support

Pre-commissioning support

FY08

Commissioning and pre-operations support



AGM Plans

FY04

Feasibility study
Conceptual design

FY05-08

TBD

Nearly impossible to predict until a feasibility and conceptual design is complete



Budget Summary

Device/FY	04	05	06
In FY04 \$1,000s			
PLL	156	377	425*
LUMI	203	450	950
LDM	0	198	697
AGM	80	TBD	
Total	439	986	>2072
Strawman1		745	1620
Strawman2		540	1740

